Multi-Layered Integrated Airframe System, Phase II

Completed Technology Project (2011 - 2014)

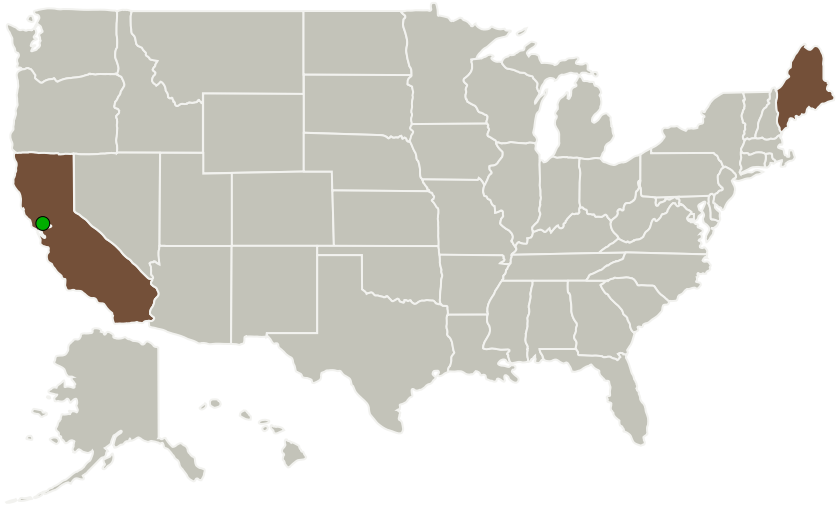
Project Introduction

This proposed Phase II program builds on the Phase I effort addressing NASA's future mission requirements by: 1) developing higher performing TPS materials capable of meeting the demands of multiple severe mission trajectories; and 2) integrating TPS materials with the sub-structure to improve overall robustness and decrease mass. The program's goal is to extend Phenolic Impregnated Carbon Ablator (PICA) and Fiber Materials, Inc. (FMI

REG

) Integrated Composite Structure (ICS) TPS materials to a broader range of flight heat fluxes and mission performance requirements to address future heatshield design needs. Specific mission enabling improvements sought by NASA that will be developed and/or demonstrated under this Phase II program include: preform/component size, ablation performance, thermal insulation performance, efficient and extendable assembly process, and net-shape preform casting.

Primary U.S. Work Locations and Key Partners



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Organizations Performing Work	Role	Type	Location
Fiber Materials, Inc.	Lead Organization	Industry	Biddeford, Maine
Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Maine

Project Transitions

August 2011: Project Start

January 2014: Closed out

Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/139136)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Fiber Materials, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

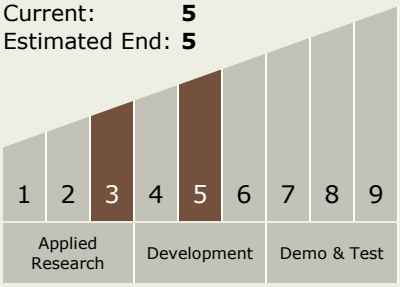
Carlos Torrez

Principal Investigator:

Steve N Violette

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.3 Thermal Protection Components and Systems
    - TX14.3.1 Thermal Protection Materials

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System